



## WEEKLY OVERSIGHT REPORT

**CH2MHILL****Weekly Summary Report  
USEPA Oversight, Sauget Area 2, Sauget, IL  
WA No. 224-RXBF-05XX / Contract No. 68-W6-0025****Week Ending Friday April 30, 2004**

This report summarizes the Interim Remedial Action (IRA) work conducted by Solutia and its contractors from April 26 through April 30, 2004 at Site R, Sauget Area 2. The current IRA fieldwork consists of barrier wall trenching and backfilling.

**Contractors Onsite**

Inquip Associates Inc. (barrier wall construction contractor)  
PSI (geotechnical testing subcontractor)  
Pangea (subcontractor to Inquip for site maintenance)  
URS (primary consultant for Solutia)

**Work Performed This Week**

Work at the site continued with a crew of Inquip operators and laborers performing site and trench maintenance activities. Along the east-west leg of the trench at the southernmost section of the barrier wall, approximately eighty feet of trench was excavated during the week with either the small trackhoe or the Koehring trackhoe, extending the open trench to station 7+40. Backfill was placed in the trench on two days during the week, with the daylighted backfill closing the north end of the open trench to station 20+20. The mechanical and hydraulic clamshells both continued excavation during the week along the south arm of the trench, the mechanical rig was used primarily to break boulders while the hydraulic rig excavated and cleaned the trench bottom.

**Groundwater Migration Control System (GMCS)**

During the week, the river elevations increased in steps from 388.55 feet above mean sea level (amsl) on April 26 to 392.18 ft amsl on April 30. As a result, the combined flow rate of the extraction well system decreased correspondingly from 1,221 gallons per minute (gpm) at the beginning of the week to 1,041 gpm at the end of the week.

The eight barrier wall piezometers, with four inside and the other four outside the barrier wall alignment, continued to monitor the groundwater water elevations adjacent to the barrier wall alignment. Table 1 shows the river and piezometer water elevations measured on April 30, 2004 (16:00 PM).

For the two pairs of piezometers located at the north and south ends of Site R (P1S/P1N and P4E/P4S), water levels measured inside the barrier wall alignment were generally within one foot lower than those measured outside the barrier wall alignment. For the other two pairs of piezometers located in the central portion of Site R, the water elevations at the piezometers located west of the barrier wall were generally within two feet lower than those located east of the barrier wall during the first three days of the week. During the last two days of the week, however, the water elevations in piezometers located west of the barrier

wall were generally higher than those located east of the barrier wall. Nevertheless, the river elevations were significantly higher than those measured at all eight piezometers, indicating an inward groundwater flow direction toward Site R. Note that the transducer in piezometer P2E was replaced on April 30, following the occurrence of irregular data recorded during the week.

**TABLE 1**  
River and Piezometer Water Elevations – April 30, 2004 (16:00 PM)

	<b>Elevation (ft above mean sea level)</b>
River Level	392.18
Piezometer 1S – inside wall (northern-most pair)	388.71
Piezometer 1N – outside wall (northern-most pair)	388.11
Piezometer 2E – inside wall (north-central pair)	388.63
Piezometer 2W – outside wall (north-central pair)	388.77
Piezometer 3E – inside wall (south-central pair)	387.64
Piezometer 3W – outside wall (south-central pair)	388.17
Piezometer 4E – inside wall (southern-most pair)	388.58
Piezometer 4W – outside wall (southern-most pair)	387.86

## **Stormwater**

No stormwater activity took place this week.

## **Slurry Mixing**

Approximately 49 tons of bentonite gel was used to mix fresh slurry this week. The slurry, when pumped from the south holding pond to the open trench, was tested frequently to assess its viscosity and adjusted with a blending pump using water from the fire hydrant, as necessary. The viscosity of the slurry was measured using a Marsh funnel, with results generally meeting the specification.

## **Spoils Handling**

During the week, numerous truck loads of spoils were transferred from the southern portion of the exclusion zone to the temporary stockpile area on top of the landfill. Spoils excavated from the shallow trench located at the south arm of the barrier wall alignment consisted of rubber materials which will not be used for backfill mixing. A bulldozer was used to level the spoils at the temporary stockpile area.

## **Barrier Wall Construction**

Inquip continued excavation of the trench along the south arm of the barrier wall alignment with the hydraulic clamshell rig for deeper excavation and with the mechanical clamshell rig to break boulders.

As of April 30, the open trench was approximately 1,260 feet in length along the barrier wall alignment from station 7+40 towards station 20+00 (please refer to Solutia's map for locations).

Fresh bentonite slurry was pumped into the open trench as needed to keep the excavation open on four days of the week. Slurry samples were collected from the top and the bottom of the trench daily; fresh and trench slurry samples were tested for viscosity, density (unit weight), filtrate loss, pH and sand content during the week.

Three of the ten bottom trench slurry samples and one of the five top trench slurry samples exceeded the viscosity specification (with results between 108 and 159 seconds to pass through the Marsh Funnel; the specification is between 40 to 100 seconds). The viscosity results of fresh slurry samples were below the specification range on one day of the week. The density results of the trench slurry were satisfactory, more than 20 pounds per cubic foot lower than the unit weight of the backfill materials. The density results of the fresh slurry samples were slightly below the corresponding specification. The results for filtrate loss and pH in these samples generally met the specifications. The results of sand content in three of the ten bottom trench slurry samples exceeded the maximum allowable content of 20 percent. The trench slurry samples with sand content exceeding specification were collected at stations 9+80 and 10+00.

During the week, Inquip mixed and placed into the trench approximately 660 cubic yards of backfill materials. Backfill operations took place on two days of the week. The backfill consists of spoils with the addition of approximately 15 percent of clay and one percent of bentonite (from trench slurry) in dry weight. The backfill was tested by PSI for slump, unit weight and moisture content. All test results reviewed met the minimum requirements.

The bottom of the trench at and ahead of the backfill toe was cleaned using the clamshell rig prior to the backfill placement. Depth-to-bottom measurements were made every 10 linear feet of trench to ensure the bottom of the trench was at a consistent depth and on top of bedrock. These depth measurements were performed with the clamshell rig's instrumentation and confirmed in two locations manually with the downrigger (plumbob on wire). Two samples were collected by PSI with a clam sampler from the top of the placed backfill in the trench prior to backfill placement daily. These samples were visually checked to ensure that the backfill surface in the trench was clean and free of any sand.

During the week, the trench depths were generally measured once at the end of the day except for April 30 due to a severe thunderstorm at the end of the day. The afternoon trench depth measurements were made every 100 linear feet of trench, with 20-foot spacing of measurements on either side of the backfill toe. The trench depth measurements from the morning of May 3, after the backfill placement into the trench on April 30, are shown in Table 2. The trench profile is depicted in Graph 1, and is compared to the trench depth profile measured end of the previous week (April 23). Graph 2 shows the overall progress of the barrier wall construction.

## Other Activities

Pangea was onsite during the week to cut through the concrete road located at the north side of Site R to prepare for future barrier wall excavation. The concrete to be removed for the barrier wall construction measured approximately 700 feet (length) by 4 feet (width) by 10 inches (thickness).

After removing the concrete from the ground surface, a small backhoe was used to excavate the barrier wall footprint to a maximum depth of ten feet to explore the underground utilities. During the week, utilities encountered at the west portion of Riverview Road included a benzene line (six-inch in diameter, inactive), three water lines (one two-inch, one six-inch, and one 12-inch in diameter), and a box culvert. The 12-inch water line was wrapped in concrete during the week. Fly ash was generally encountered at four feet deep at the west portion of the road. All underground utilities encountered during the week were marked on ground surface. The trench was backfilled with soils/fly ash excavated from the pit.

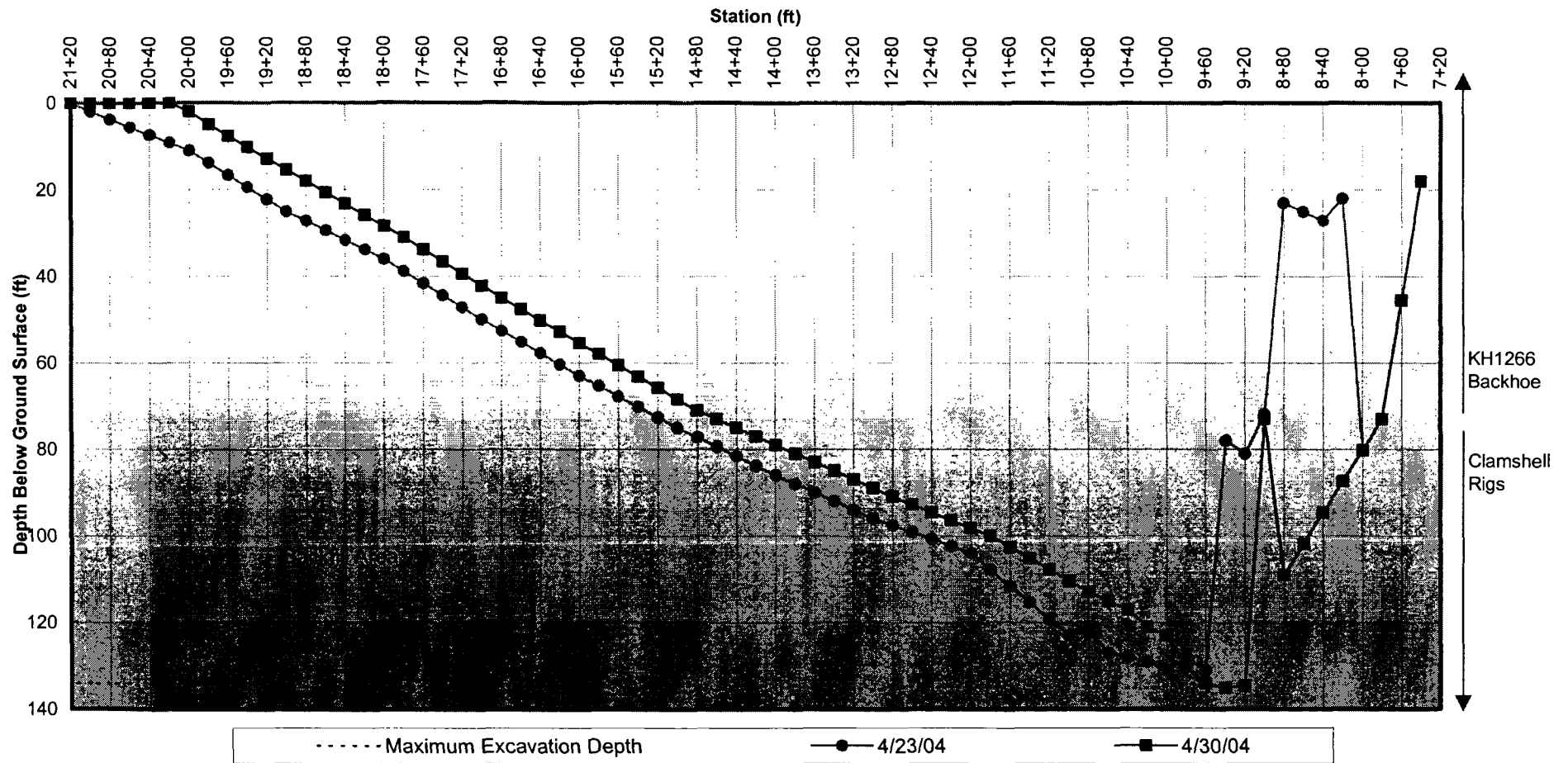
In addition, Inquip started building a remote backfill mixing pad at an area near the fresh slurry mixing ponds, using clean clay from offsite. The backfill materials to be mixed at this area will be transferred and placed into the trench located south of Site R where fly ash was generally encountered.

**TABLE 2**  
Trench Profile (Downrigger Measurements) for the Barrier Wall Trench – May 3, 2004 (AM)

Station ID	Depth to bottom (ft below ground surface)
7+40	18
7+80	73
8+80	109
9+00	73
9+20	135
9+40	136
9+60	134
9+80	130
10+00	123
10+20	121
10+40	117
10+60	115
10+80	113
11+80	100
12+80	91
13+80	81
14+80	71
15+80	58
16+80	45
17+80	31
18+80	18
19+80	5
20+00	2

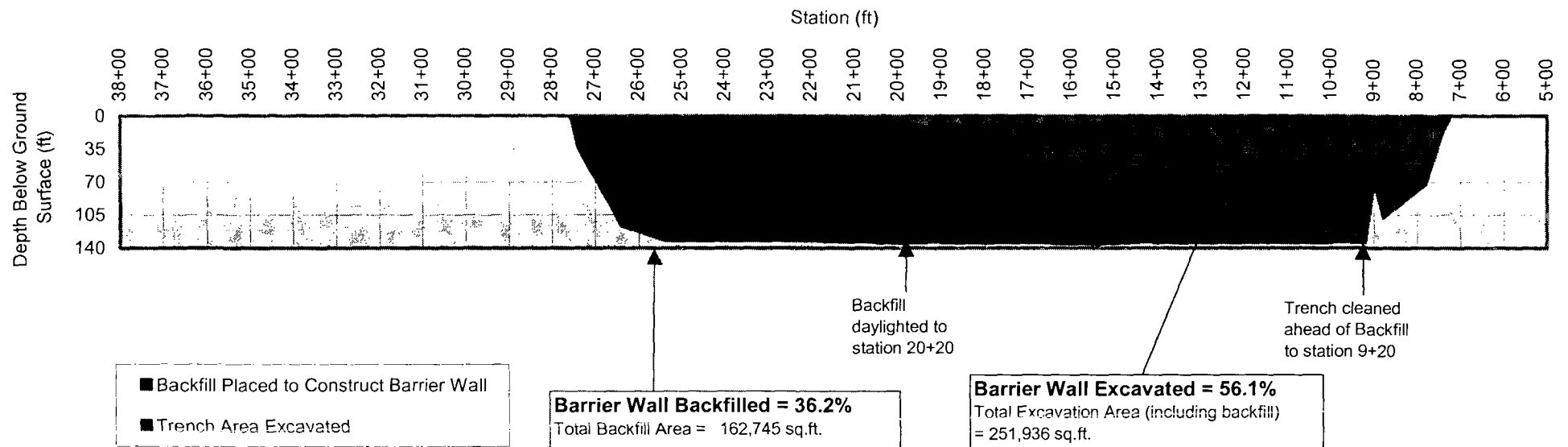
Note: Data measured with downrigger May 3, 2004 AM as the PM profile on April 30, 2004 was not taken due to inclement weather.

**Graph 1 - Weekly Barrier Wall Construction Progress**  
**April 23 to April 30, 2004**



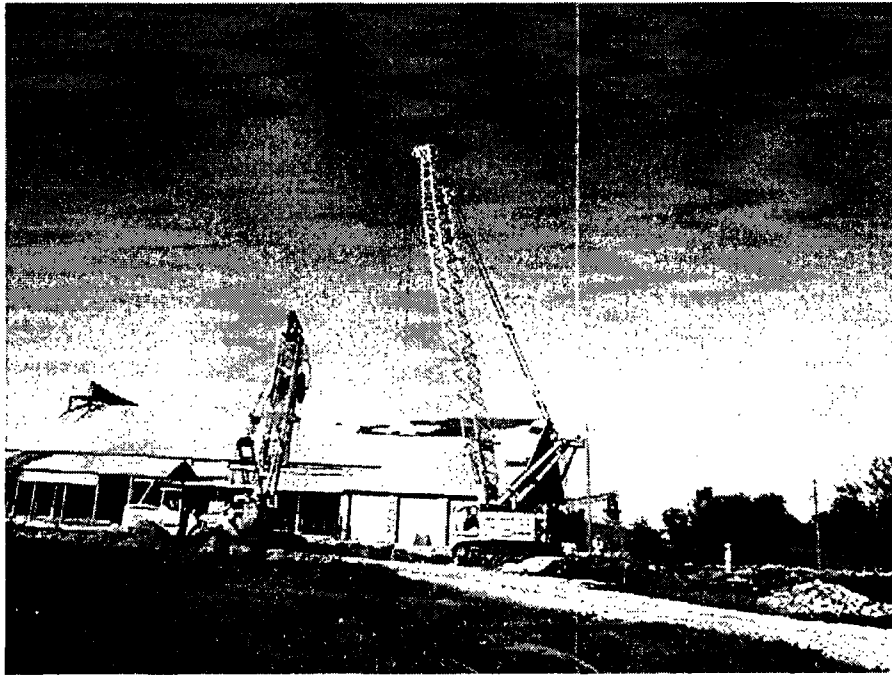
Note: Data plotted for the week through PM measurements on 4-23-04 and AM measurements on 5-3-04.  
 Some data points are interpolated between the available data points where trench depth measurements were read.

**Graph 2 - Barrier Wall Construction Progress by April 30, 2004 (PM)**



Note: Data plotted for week through AM measurements on 5-3-04.

Photos from April 26 through April 30, 2004:



Both clamshell rigs excavating at the south leg of the barrier wall alignment (April 29, 2004).



Inquip building a remote backfill mixing pad at an area south of the slurry mixing pond using clean clay from offsite (April 29, 2004).